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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/194,297 11/23/98 PALLONEN

J 10178.69USWO

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EXAMINER

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TRAN, P

ART UNIT	PAPER NUMBER
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2749

DATE MAILED: 09/12/00 *S*

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No. 09/194,297	Applicant(s) Pallonen
Examiner Pablo Tran	Group Art Unit 2749



Responsive to communication(s) filed on _____.

This action is FINAL.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

Claim(s) 1-8 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

Claim(s) _____ is/are allowed.

Claim(s) 1-3 and 5-8 is/are rejected.

Claim(s) 4 is/are objected to.

Claims _____ are subject to restriction or election requirement.

Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on _____ is/are objected to by the Examiner.

The proposed drawing correction, filed on _____ is approved disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All Some* None of the CERTIFIED copies of the priority documents have been received.

received in Application No. (Series Code/Serial Number) _____.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). 3

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 2749

DETAILED ACTION

Specification

1. The following guidelines illustrate the preferred layout and content for patent applications. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

The following order or arrangement is preferred in framing the specification and, except for the reference to "Microfiche Appendix" and the drawings, each of the lettered items should appear in upper case, without underlining or bold type, as section headings. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) Title of the Invention.
- (b) Cross-References to Related Applications.
- (c) Statement Regarding Federally Sponsored Research or Development.
- (d) Reference to a "Microfiche Appendix" (see 37 CFR 1.96).
- (e) Background of the Invention.
 - 1. Field of the Invention.
 - 2. Description of the Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) Brief Summary of the Invention.
- (g) Brief Description of the Several Views of the Drawing(s).
- (h) Detailed Description of the Invention.
- (i) Claim or Claims (commencing on a separate sheet).
- (j) Abstract of the Disclosure (commencing on a separate sheet).
- (k) Drawings.
- (l) Sequence Listing (see 37 CFR 1.821-1.825).

Art Unit: 2749

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Tayloe et al.* (EP0431956A2) further in view of *Hayes et al.* (GB2253758A).

As per claims 1 and 5, *Tayloe et al.* disclosed a base station (BTS1) of a radio system, which base station comprises:

- measuring equipment (8) for measuring the signal levels of the signals received by the different antenna beams (abstract, fig. 3, col. 4/ln. 19-col. 5/ln. 52),
- calculation means (9) which are responsive to the measuring equipment (8) for determining the direction from the base station (BTS1) to the mobile station (MS) on the basis of the relations of the signal levels measured for the different antenna beams (1 - 4) (abstract, fig. 3, col. 4/ln. 19-col. 5/ln. 52), and
- equipment for defining a timing advance (TA) for the mobile station (MS) which is in radio connection with the base station to compensate for a time lag caused by the distance between the mobile station and the base station (abstract, fig. 3, col. 4/ln. 19-col. 5/ln. 52), characterized in that

Art Unit: 2749

- the calculation means (9) comprise equipment for calculating the distance between the base station (BTS1) and the mobile station (MS) on the basis of the timing advance (TA) defined for the mobile station and the propagation speed of the radio signals (abstract, fig. 3, col. 4/ln. 19-col. 5/ln. 52).

Tayloe et al. disclose Applicant's invention except teaching antenna equipment (1 - 4, 6, 7) for receiving signals from a certain mobile station simultaneously by at least two antenna beams (1 - 4) directed in different directions. *Hayes et al.* disclose receiving signals from a certain mobile station simultaneously by at least two antenna beams directed in different directions (abstract, fig. 1, pg. 5/ln. 15-pg. 6/ln. 16). In order to determine which antenna beam receives the largest amplitude signal to derive the direction of the mobile, it would have obvious to one of ordinary skill in the art at the time of Applicant's invention to provide a cellular radiotelephone diagnostic system as taught by *Tayloe et al* in conjunction with a communication device with a interferometer as taught by *Hayes et al.*

As per claims 2 and 6, *Tayloe et al.* further disclosed the calculation means (9) are arranged for calculating for each beam (1 - 4) the mean value of the signal levels of the signals received from the mobile station (MS) by the respective antenna beams, whereby the calculation means (9) are arranged to determine the direction from the base station (BTS1) to the mobile station (MS) on the basis of relations between the calculated mean values (abstract, fig. 3, col. 4/ln. 19-col. 5/ln. 52).

Art Unit: 2749

As per claims 3 and 7, *Hayes et al.* further disclosed the calculation means (9) include means for choosing the antenna beam (1) with the strongest signal level and at least one adjacent beam (2), whereby the calculating means (9) are arranged for determining the direction from the base station (BTS1) to the mobile station (MS) on the basis of the relations of the signal levels (RSSI1, RSSI2) of the signals received via the chosen antenna beams (1, 2)(abstract, fig. 1, pg. 5/ln. 15-pg. 6/ln. 16).

As per claim 8, said base station is a base station (BTS1) of a cellular radio system divided into logical traffic channels in accordance with a TDMA principle (abstract, fig. 3, col. 4/ln. 19-col. 5/ln. 52).

Allowable Subject Matter

4. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Akeda (6,061,564), Kawamoto (6,075,993), Reudink et al. (5,884,147), Gilhousen (5,970,413), Keskitalo et al. (5,893,033), Keskitalo et al. (5,966,670), Kornestedt et al.

Art Unit: 2749

(6,021,329), Gilhousen (6,034,635), Ito (6,018,556) discloses method and system for locating a mobile station.

6. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Pablo Tran whose telephone number is (703)308-7941. The fax number for this Group is (703)308-6306 and (703)308-6296.

Any inquiry of a general nature to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703)305-3900.

August 25, 2000

Pablo Tran

Examiner, Art Unit 2749


DANIEL S. HUNTER
SUPERVISORY PATENT EXAMINER
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